

Comet 1889 . . . (Barnard's, Sept. 2, 1888.)

1888. Sept.	Greenwich Mean Time.	Comet- Star.		No. of Comps.	Comet's App. R.A.		Log ( $p \times \Delta$ ).	Comet's App. Dec.		Log ( $p \times \Delta$ ).	Red. to App. Place.	Comp. Star.
		$\Delta\alpha$ .	$\Delta\delta$ .		$h$	$m$ $s$		$h$ $m$ $s$	$^{\circ}$ $'$ $''$		$s$	
Sept.	11	+1 12'55	- 9 19'6	8-8	6 50	56'47	9'5125 <sub>n</sub>	+10 23 35'7	0'8035	+0'81	-0'7	14
	12	+1 40'93	+ 4 14'1	8-8	6 50	40'97	9'5188 <sub>n</sub>	+10 19 16'5	0'8056	+0'84	-0'5	15
	13	+1 23'05	- 0 33'0	8-8	6 50	23'11	9'5139 <sub>n</sub>	+10 14 29'4	0'8046	+0'86	-0'5	15
	13	+0 5'42	+ 8 24'9	3-3	6 50	22'43	9'4869 <sub>n</sub>	+10 14 28'0	0'7987	+0'86	-0'5	16
Oct.	14	-0 13'22	+ 3 54'1	4-4	6 50	3'82	9'5297 <sub>n</sub>	+10 9 57'1	0'8094	+0'88	-0'5	16
	30	-1 12'73	- 1 10'2	8-8	6 39	57'05	9'4417 <sub>n</sub>	+ 8 37 10'0	0'8011	+1'38	+0'1	17
	1	+0 49'13	- 1 37'1	8-8	6 38	56'00	9'4212 <sub>n</sub>	+ 8 30 7'3	0'7996	+1'43	+0'2	18
	2	-0 26'58	- 3 32'0	8-8	6 37	51'82	9'4227 <sub>n</sub>	+ 8 22 58'8	0'8005	+1'46	+0'2	19
	5	+1 26'76	- 3 51'8	8-8	6 34	14'71	9'3821 <sub>n</sub>	+ 8 0 17'4	0'7993	+1'58	+0'4	20
	6	+1 1'56	+ 3 4'4	8-8	6 32	54'83	9'3765 <sub>n</sub>	+ 7 52 31'8	0'7997	+1'61	+0'5	21
	7	+2 45'82	+ 4 42'7	9-8	6 31	29'92	9'3475 <sub>n</sub>	+ 7 44 14'7	0'7990	+1'65	+0'7	22
	8	+1 16'23	- 3 53'4	9-9	6 30	0'36	9'2785 <sub>n</sub>	+ 7 35 38'6	0'7968	+1'68	+0'6	22
	13	+2 40'15	- 3 49'0	7-7	6 21	25'99	9'2685 <sub>n</sub>	+ 6 50 18'5	0'8017	+1'88	+1'0	23
	14	-1 37'40	+ 6 58'3	8-8	6 19	38'29	9'5187 <sub>n</sub>	+ 6 41 30'6	0'8208	+1'89	+1'0	24
	15	+1 54'59	+ 0 51'3	9-9	6 17	21'79	9'2377 <sub>n</sub>	+ 6 31 32'8	0'8028	+1'95	+1'2	25
	30	-1 37'44	- 4 52'9	8-8	5 31	59'38	9'3738 <sub>n</sub>	+ 3 16 24'7	0'8257	+2'51	+3'1	26
Nov.	9	+3 20'09	- 6 36'0	6-6	4 42	19'83	9'3035 <sub>n</sub>	+ 0 15 6'4	0'8402	+2'84	+5'4	27
	13	+0 6'97	+ 7 22'7	9-9	4 17	47'50	9'2128 <sub>n</sub>	- 1 6 15'8	0'8472	+2'92	+6'2	28

October 30.—Comet faint, from fog and cloud.

	Greenwich Mean Time.	Comet—Star.		No. of Comps.	Comet's App. R.A.		Log ( $p \times \Delta$ ).	Comet's App. Dec.		Log ( $p \times \Delta$ ).	Red. to App. Place.	Comp. Star.
	h m s	$\Delta\alpha$ .	$\Delta\delta$ .		h m s	$\Delta\delta$ .		h m s	$\Delta\delta$ .			
1888. Nov. 20	11 30 21	+1 19.67	+7 30.7	9-9	3 30 10.37		8.0309	-3 28 30.9		0.8609	+2.97	7.6 29
	10 51 0	-2 36.79	-9 46.5	8-8	3 16 21.86		8.2445 <sub>n</sub>	-4 5 39.3		0.8641	+2.97	7.8 30
	11 28 43	+3 26.32	-9 52.9	9-9	3 9 11.63		8.7781	-4 23 50.9		0.8655	+2.95	8.2 31
	12 39 9	-1 36.10	-3 55.9	7-7	2 48 10.46		9.3251	-5 13 47.0		0.8646	+2.92	8.4 32
	7 59 18	+2 49.02	+5 27.1	8-8	1 53 5.92		8.880 <sub>n</sub>	-6 54 57.4		0.8770	+2.68	9.2 33
6	7 58 30	-1 39.57	+5 58.6	9-9	1 47 35.38		8.8042 <sub>n</sub>	-7 2 21.3		0.8778	+2.67	9.0 34
7	8 6 25	-2 27.36	+6 28.9	8-8	1 42 13.19		8.5608 <sub>n</sub>	-7 9 4.3		0.8788	+2.64	9.0 35
9	8 41 11	+2 36.81	+2 20.5	7-7	1 31 55.81		8.6829	-7 20 20.0		0.8795	+2.56	9.3 36
13	7 25 1	-1 31.54	-2 26.6	8-8	1 13 53.89		8.2955 <sub>n</sub>	-7 35 0.0		0.8809	+2.46	9.2 37
22	7 1 47	-4 23.44	+4 30.1	8-8	0 41 53.34		8.7067	-7 39 24.0		0.8808	+2.21	9.2 38
23	9 6 18	+3 28.97	+5 37.9	1-1	0 38 45.67		9.3814	-7 38 2.5		0.8709	+2.14	9.4 39
26	9 22 40	+1 23.00	+1 49.1	8-8	0 30 49.50		9.4490	-7 32 51.0		0.8659	+2.07	9.4 40
30	6 51 46	-1 58.77	+3 51.8	8-8	0 21 58.40		9.0620	-7 23 11.8		0.8780	+1.99	9.3 41
30	7 5 41	-4 11.21	+3 20.5	4-4	0 21 56.93		9.1346	-7 23 7.4		0.8772	+2.00	9.2 42
1889. Jan. 1	7 11 37	-1 32.17	-7 10.7	8-8	0 19 54.02		9.1873	-7 20 29.3		0.8761	+1.97	9.4 43
	6 20 51	+1 6.46	-1 47.9	8-8	0 18 0.79		8.9335	-7 17 29.5		0.8784	-1.13	10.6 44

November 20-22.—Very windy. Clock almost inaudible at times.  
November 23.—Observation obtained with difficulty. Very high wind and passing clouds.  
December 6.—Comet faint at times, owing to light cirrus clouds.  
December 30.—A small star was almost coincident with the nucleus of the comet at the commencement of the observations.  
December 31.—Comet very faint, from haze.

1889. Jan. 20 27 Feb. 4 8	Greenwich Mean Time.		Comet—Star.		No. of Comps.	Comet's App. R.A.		Log (p × Δ).	Comet's A pp. Dec.		Log (p × Δ).	Red. to App. Place.		Comp. Star.
	h	m	s	Δ.		h	m		°	'		°	'	
	6	28	45	+ 1 14.64	8-8	23	53	18.57	9.3751	-6	2	29.0	- 1.47	45
	6	46	8	- 1 20.01	8-8	23	48	20.42	9.4648	-5	30	31.9	- 1.53	46
	6	55	47	+ 1 17.13	2-2	23	44	18.84	9.5170	-4	52	48.4	- 1.62	47
	6	35	8	+ 1 8.43	5-6	23	42	48	9.5137	-4	33	57	- 1.64	48
Comet V., 1888 . . . (Barnard's, October 30, 1888.)														
1888. Nov. 13	17	28	55	- 1 27.17	7-7	10	2	29.56	8.9372 <sub>n</sub>	-12	58	29.0	+ 1.45	49
Dec. 6	15	53	56	+ 1 33.13	8-8	10	23	22.19	9.0935 <sub>n</sub>	- 7	16	22.2	+ 2.11	50
7	15	47	7	- 1 29.57	8-8	10	23	55.03	9.1109 <sub>n</sub>	- 6	57	19.0	+ 2.12	51
9	15	42	13	- 2 8.49	8-8	10	24	55.82	9.1005 <sub>n</sub>	- 6	18	15.1	+ 2.18	52
12	15	49	7	+ 2 13.39	8-8	10	26	12.84	8.9970 <sub>n</sub>	- 5	16	25.7	+ 2.29	53
26	11	54	53	- 1 7.41	8-8	10	28	7.54	9.5035 <sub>n</sub>	+ 0	20	26.2	+ 2.71	54
30	12	2	45	- 1 25.29	8-8	10	27	24.81	9.4750 <sub>n</sub>	+ 2	13	28.5	+ 2.83	55

February 8.—Comet faint, from moonlight. The wind being very high the clock was heard with difficulty.  
November 13.—Comet fairly bright, but overpowered by twilight latterly.  
December 6.—Comet rather faint. Sky hazy. December 26.—Comet faint and observation difficult.  
December 30.—Comet faint and observation difficult, owing to the proximity of a small star.